

WHAT IS CLAIMED IS:

1. A method for user equipments (UE) mobility management in a mobile communication system, wherein said mobile communication system comprises: a core network, one or more universal terrestrial radio access networks (UTRAN) and a plurality of user equipments (UE), wherein the core network communicates with the UTRAN via an Iu interface; said UTRAN consists of a plurality of radio network systems (RNS) and communicates with one or more UEs via a Uu interface, each said RNS comprising a radio network controller (RNC) and one or more nodes communicating with said RNC through an Iub interface, each node comprising one or more cells, and the communication between RNCs being performed via an Iur interface; the UTRAN controls the UE mobility management through a radio resource control (RRC) signalling of the Uu interface; said method comprising the steps of:

the UE transmitting uplink an RRC signalling message to a first RNC so as to request UE mobility management;

said first RNC receiving and forwarding to the core network said uplink RRC signalling message;

the core network forwarding transparently to a second RNC said uplink RRC signalling message; and

the second RNC receiving and utilizing the forwarded uplink RRC signalling message to perform the requested mobility management.

2. The method according to claim 1, characterized by further comprising a determining step for determining whether there exists Iur transport link between said first RNC and said second RNC, before the step in which the first RNC forwards said uplink RRC signalling message.

3. The method according to claim 1 or 2, characterized in that said first RNC is a destination RNC communicating with said UE; said second RNC is a serving RNC for controlling said UE and causing said UE to communicate with the core network.

4. The method according to claim 1 or 2, characterized in that in the step in which said first RNC forwards to the core network said uplink RRC signalling message, said uplink RRC signalling message as an RANAP signalling message is transmitted from said first RNC to said core network via the Iu interface, wherein said RANAP signalling message includes Message Type, Source ID, Target ID and RRC information relevant to the mobility management requested by the UE.

5. A method according to claim 4, characterized in that in said RANAP signalling message transmitted from the first RNC to the core network, Source ID identifies the second RNC, Target ID identifies the first RNC, and RRC information relevant to the mobility management requested by the UE is defined as cell update message or URA update message.

6. The method according to claim 1 or 2, characterized in that in the step in which the UE transmits uplink the RRC signalling message to the first RNC, said UE transmits via a Common Control Channel (CCCH) an RRC signalling message for requesting cell update.

7. The method according to claim 1 or 2, characterized in that in the step in which the UE transmits uplink the RRC signalling message to the first RNC, said UE transmits via the Common Control Channel (CCCH) an RRC signalling message for requesting URA update.

8. A mobile communication system for user equipments (UEs) mobility management, wherein said mobile communication system comprises: a core network, one or more universal terrestrial radio access networks (UTRANs) and a plurality of user equipments (UEs), wherein the core network communicates with the UTRAN via an Iu interface; said UTRAN consists of a plurality of radio network systems (RNSs) and communicates with one or more UEs via a Uu interface, each said RNS comprising a radio network controller (RNC) and one or more nodes communicating with said RNC through an Iub interface, each node comprising one or more cells, and the communication between RNCs being performed via an Iur interface; the UTRAN controls the UE mobility management through a radio resource control (RRC) signalling of the Uu interface; and wherein:

the UE comprises means for transmitting uplink the RRC signalling

message to a first RNC so as to request the UE mobility management;

said first RNC comprises means for receiving from said UE and forwarding to the core network said uplink RRC signalling message;

the core network comprises means for forwarding transparently to a second RNC said uplink RRC signalling message; and

the second RNC comprises means for receiving and utilizing the forwarded uplink RRC signalling message to perform the requested mobility management.

9. The system according to claim 8, characterized in that said first RNC further comprises means for determining whether there exists Iur transport link between said first RNC and said second RNC.

10. The system according to claim 7 or 8, characterized in that said first RNC is a destination RNC communicating with said UE; said second RNC is a serving RNC for controlling said UE and causing said UE to communicate with the core network.

11. The system according to claim 7 or 8, characterized in that said first RNC forwards via the Iu interface to the core network said uplink RRC signalling message as an RANAP signaling message, wherein said RANAP signaling message includes Message Type, Source ID, Target ID and RRC information relevant to the mobility management requested by the UE.

12. The system according to claim 11, characterized in that in said

RANAP signalling message forwarded by the first RNC to the core network, Source ID identifies the second RNC, Target ID identifies the first RNC, and RRC information relevant to the mobility management requested by the UE is defined as cell update message or URA update message.

13. The system according to claim 7 or 8, characterized in that the UE transmitting uplink the RRC signalling message to the first RNC includes said UE transmitting uplink via a Common Control Channel an RRC signalling message for requesting cell update.

14. The system according to claim 7 or 8, characterized in that the UE transmitting uplink the RRC signalling message to the first RNC includes said UE transmitting uplink via the Common Control Channel an RRC signalling message for requesting URA update.